## **ICOR-002**

What is claimed is:

) 1. A method, with the aid of a computer system, of tracking credit limits for a plurality of tenors of one or more financial instruments, comprising:

defining a plurality of buckets, each said tenor associated with at least one said bucket;

assigning proportional draw down relationship between said buckets; receiving a signal associated with a trade action, said signal including a trade tenor and a trade amount; and

recalculating said proportional draw down relationships as a function of said trade amount and said trade tenor.

- The method of claim 1 further comprising:
   defining an overriding credit limit for each said bucket.
- 3. The method of claim 2 further comprising: recalculating said overriding credit limit for each bucket as a function of said trade amount and said trade tenor.
- 4. The method of claim 3 further comprising: calculating a current available limit for each bucket.
- 5. The method of claim 3 further comprising: defining an initial proportional draw down  $(M_i^0)$  for each of i=1...N buckets; said recalculation of said proportional draw down relationship comprising:

implementing a function expressed as

$$M_i^{\alpha} \neq 1 = M_i^{\alpha} - (M_i^{\alpha} / M_k^{\alpha}) * X_k,$$

where  $M_i\alpha$  +1 denotes the value of the proportional draw down for bucket i after  $\alpha$  +1 trades, and  $X_k$  denotes the size of the trade for bucket

6. The method of claim 5 wherein said recalculation of said overriding limits comprises:

implementing a function expressed as

$$O_i^{\alpha} + 1 = O_i^{\alpha} - \delta_{ik} * X_k$$

where  $O_i^{\alpha}$  + 1 denotes the value of the overriding limit for bucket i after  $\alpha$  + 1 trades, and  $\delta_{ik}$  is the Kronecker Delta function and has a value equal to 0 if i is not equal to k and a value equal to 1 if i equals \( \bar{k} \).

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The method of claim 6 further comprising/ defining an initial proportional draw down  $(M_i^0)$  for each of i = 1...N buckets; said calculation of said current available limits comprising:

implementing a function expressed as

$$C_i^{\alpha+1} = \max \left( \min \left[ M_i^{\alpha} + 1, O_i^{\alpha+1} \right], CL_{\min} \right)$$

 $C_i^{\alpha+1} = \max (\min [M_i^{\alpha}] + 1, O_i^{\alpha+1}], CL_{\min}),$ where  $C_i^{\alpha+1}$  is the current available limit for bucket i after  $\alpha + 1$ trades, Clain is a minimum trade amount below which trades will be allowed and max is the maximum function and min is the minimum function.

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- The method of claim 6 wherein CL is zero. 8.
- 9. The method of claim 1 further comprising: calculating a current available limit for each bucket.
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The method of claim 9 further comprising: defining an initial proportional draw down ( $M_i^0$ ) for each of i = 1...N buckets; said recalculation of said proportional draw down comprising:

implementing a function expressed as

$$M_i^{\alpha} + 1 = M_i^{\alpha} - (M_i^{\alpha} / M_k^{\alpha}) * X_k,$$

where  $M_i^{\alpha}$  + 1 denotes the value of the proportional draw down for bucket i after  $\alpha + 1$  trades, and  $X_k$  denotes the size of the trade for bucket k;

said calculation of said gurrent available limit comprising:

implementing a function expressed as

$$C_i^{\alpha} + 1 = \max [C_i^{\alpha} - (M_i / M_k) * X_{k,i}, CL_{min}]$$

 $C_i^{\alpha} + 1 = \max [C_i^{\alpha} - (M_i / M_k) * X_{k,i}, CL_{min}]$ where  $C_i^{\alpha} + 1$  is the current available limit for bucket i after  $\alpha + 1$ trades, CL/nin is a minimum trade amount below which trades will be allowed and max is the maximum function and min is the minimum function/

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11. The method of claim 9 further comprising:

determining whether said trade amount associated with said trade signal is greater than said current available limit for said bucket associated with said trade tenor, said trade associated with said trade signal is not allowed if said trade amount is greater than said current available limit for said bucket associated with said trade tenor.

- 12. The method of claim 11 further comprising: displaying an indication if said trade amount is greater than said current available limit.
- 13. The method of claim 1 further comprising:
  setting a normalized credit limit (NTC);
  calculating a conversion ratio CR to said NTC for each said bucket (i);
  recalculating NTC according to the function

NTC $^{\alpha+1}$  = NTC $^{\alpha}$  – (X<sub>k</sub> \* CR<sub>i</sub>), where NTC $^{\alpha+1}$  is the NTC value after  $\alpha$  + 1 trades, X<sub>k</sub> is the size of the  $\alpha$  + 1 trade and CR<sub>i</sub> is the conversion ratio for bucket i;

defining an initial proportional draw down ( $M_i^0$ ) for each of i = 1...N buckets; and said recalculating said proportional draw down relationships in response to said trade signal being performed according to the function

$$M_i^{\alpha+1} = NTC^{\alpha+1} * 1/ R_i$$

where  $M_i^{\alpha+1}$  denotes the value of the proportional draw down for bucket i after  $\alpha + 1$  trades.

14. The method of claim 1 wherein said credit limits are tracked for a plurality of parties, said method further comprising:

identifying, for each party, a set of counterparties said party may potentially trade with, each said counterparty having at least one plurality of buckets associated with it.

having at least a first plurality of buckets and a second plurality of buckets associated with said counterparty, said party assigning a first proportional draw down relationship between said first plurality of buckets, said party further assigning a second proportional draw down relationship between said second plurality of buckets.

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- 16. The method of claim 15 in which said first proportional draw down relationship is unrelated to said second draw down relationship.
- 17. The method of claim 14 in which at least one said party has a plurality of trading groups associated with it.
- 18. The method of claim 17 in which at least one said trading group has a set of counterparties associated with said trading group.
- 19. The method of claim 1 wherein said financial instruments are selected from the group consisting of stocks; contracts based on the exchange of commodities, bonds, and derivative instruments.
- 20. The method of claim 1 wherein said financial instruments are selected from the group consisting of foreign exchange products fixed income products, and equity products.
- 21. The method of claim 19 wherein said derivative instruments are selected from the group consisting of American options, European options, exotic options, forwards, swaps, forward rate agreements, swaptions, and convexity products.
- 22. The method of claim 7 wherein  $CL_{min}$  is assigned globally to a plurality of potential counterparties.
- 23. The method of claim 7 wherein CL<sub>min</sub> is assigned individually to each of a plurality of potential counterparties.
  - 24. The method of claim 1 wherein said signal further includes an identification of a financial instrument, a buyer and a seller;

said assigning a proportional draw down relationship between said buckets including associating a first proportional draw down relationship for credit extended by said buyer to said seller, said first proportional draw down relationship associated with a first set of said buckets, and associating a second proportional draw down relationship for credit extended by said seller to said buyer, said second proportional draw down relationship associated with a second set of said buckets;

said method further comprising:

determining whether to recalculate said first proportional draw down relationship based on the type of financial instrument; and

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determining whether to recalculate said second proportional draw down relationship based on the type of financial instrument,

wherein trades for certain types of financial instruments will only effect said first or second proportional draw down relationships based on the type of instrument and whether the party is a buyer or seller.

25. The method of claim 24 wherein each said bucket is associated with a current available credit limit, said method further comprising:

if said first proportional draw down relationship is recalculated, recalculating said current available credit limit for each said bucket in said first set of buckets; and

if said second proportional draw down relationship is recalculated, recalculating said current available credit limit for each said bucket in said second set of buckets.

26. The method of claim 25 wherein each said bucket is associated with an overriding credit limit, said method further comprising:

if said first proportional draw down relationship is recalculated, recalculating said overriding credit limit for each said bucket in said first set of buckets; and

if said second proportional draw down relationship is recalculated, recalculating said overriding credit limit for each said bucket in said second set of buckets.

- 27. The method of claim 1 wherein said buckets are identified with a bucket tenor, each said trade being associated with a bucket having a bucket tenor greater than or equal to said trade tenor.
- 25 28. The method of claim 1 wherein said buckets are identified with a bucket tenor, each said trade being associated with a first bucket and a second bucket based on interpolation.
  - A method of trading of financial instruments between institutions comprising: identifying a plurality institutions to trade with; identifying a plurality of buckets;

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identifying a set of financial instruments to be traded, each said financial instrument having at least one tenor, each said tenor associated one said bucket;

setting an initial available credit limit for each said bucket, said available credit limit for each of said bucket is normalized by assigning a relationship to said available credit limits, wherein credit extended on one of said tenors reduces said available credit in said associated bucket and further reduces said available credit for said other buckets in said plurality of buckets, said available credit being reduced in proportion to said initial assigned credit limits;

trading said securities; and recalculating and normalizing said available credit limits with each trade.

30. A system for tracking credit limits among a plurality of trading entities trading a plurality of tenors of one or more financial instruments, comprising:

a database, said database storing:

a plurality of buckets, each bucket associated with a range of tenors of said one or more financial instruments;

for at least one said trading entity, proportional draw down relationships between said buckets, said proportional draw down associated with at least one other trading entity;

for said at least one trading entity, a current available limit for each said bucket associated with each said other trading entity; and an interface adapted to receive a signal from a trading system, said signal associated with a trade action, said signal including a first party, a second party, a trade financial instrument, a trade tenor and a trade amount;

a server coupled to said interface and said database, said server adapted to:

in response to receiving said trade signal, recalculate said proportional draw down relationship between said first party and said second party as a function of said trade amount and said trade tenor; and calculate a current available limit between said first party and said second for each said trade bucket associated with said trade financial instrument.

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31. The system of claim 30 further comprising:

a display associated with a trading entity, said display including a plurality of bids and offers, each bid and offer associated with a potential counterparty, a financial instrument and a tenor,

said display further indicating the credit status between said trading entity and said potential counterparty for each said bid and offer.

- 32. The system of claim 30 wherein said server is further adapted to receive signals associated with bids and offers, each bid and offer associated with a potential counterparty, a financial instrument and a tenor, said server generating a signal indicating the credit status between said trading entity and said potential counterparty for each said bid and offer.
- 33. A method, with the aid of a computer system of tracking credit limits for a plurality of tenors of one or more financial instruments, comprising:

defining a plurality of buckets, each said tenor associated with at least one said bucket;

assigning proportional draw down relationships between said buckets; calculating an initial overriging credit limit for each said bucket;

receiving a signal associated with a trade action, said signal including a trade tenor and a trade amount; and

recalculating said overriding credit limit for each said bucket as a function of said trade amount and said trade tenor.